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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/752,977	01/07/2004	Chris Harrison	AP35474-067691.0205	4797

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EXAMINER

PIGGUSH, AARON C

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 01/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/752,977	HARRISON, CHRIS	
	Examiner	Art Unit	
	Aaron Piggush	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7 January 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: no. 10 and 20 in Fig. 1 and no. 60, 65, and 40 in Fig. 2. Examiner respectfully requests applicant to check all drawing sheets/figures for similar errors. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 13, 27, and 41 are objected to because of the following informalities: The claims recite "wherein the battery comprises a nickel metal hydride battery, a nickel cadmium battery, a lead acid battery, and a lithium ion battery." This statement should be placed in the alternative form (i.e. the term "and" is replaced by "or"). In order to further prosecution of these claims, they will be interpreted as though they were in the alternative form, wherein the battery is comprised of only one of the four types mentioned. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4, 6-18, 20-32, and 34-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Farley (US 5,767,659).

With respect to claims 1, 15, and 29, Farley discloses a battery charger, a process, and a storage medium configured to provide temperature-regulated charging of a battery, comprising:

a processing arrangement (col 4 ln 25-29 and no. 38 in Fig. 3), steps (Fig. 8a,b), and a software arrangement (col 15 ln 26-30 and no. 38, 39, and 300 in Fig. 3) operable to:

(a) obtain a temperature data associated with the battery (no. 33 in Fig. 3 and col 4 ln 37-38); and

(b) apply a charge to the battery, the charge being determined based on the temperature data of the battery (col 5 ln 35-50 and col 19 ln 52-55) wherein the battery is maintained at a predetermined threshold temperature (col 19 ln 38-60 and col 16 ln 44-56).

With respect to claims 2, 16, and 30, Farley discloses the charger, process, and storage medium further comprising a processing arrangement, steps, and a software arrangement operable to:

(c) obtain a voltage data associated with the battery (no. 35 in Fig. 3 and col 9 ln 36-38); and

(d) apply a charge to the battery, the charge being determined based on the voltage data of the battery (col 13 ln 33-36 and ln 58-61).

With respect to claims 3, 17, and 31, Farley discloses wherein the charge is applied to the battery until charging of the battery is substantially completed (col 14 ln 48-62 and col 13 ln 37-40).

With respect to claims 4, 18, and 32, Farley discloses wherein the charger, process, and storage medium further comprise the steps of using a voltage of the battery to determine if charging of battery is substantially complete (col 14 ln 48-62 and col 13 ln 32-36 and ln 58-62).

With respect to claims 6, 20, and 34, Farley discloses the charger, process, and storage medium further comprising at least one temperature sensor mounted on or in the battery, wherein the temperature sensor measures the temperature of the battery (no. 33 and 34 in Fig. 3 and col 4 ln 2-4).

With respect to claims 7, 21, and 35, Farley discloses the charger, process, and storage medium further comprising at least one temperature sensor, wherein the temperature sensor measures an ambient temperature (no. 40 in Fig. 4 and col 11 ln 19-21).

With respect to claims 8, 22, and 36, Farley discloses wherein the charge applied to the battery allows a maximum charge intensity during charging of the battery (col 13 ln 28-40).

With respect to claims 9, 23, and 37, Farley discloses wherein the temperature-regulated charging is controlled by a processing arrangement (col 4 ln 25-31 and Fig. 3).

With respect to claims 10, 24, and 38, Farley discloses wherein the processing arrangement includes a microprocessor (col 4 ln 10-11 and ln 35-36 and no. 38 in Fig. 3).

With respect to claims 11, 25, and 39, Farley discloses wherein the charge applied to the battery is based on one of voltage measurements and temperature measurements of the battery (col 5 ln 35-50, col 19 ln 52-55, and col 13 ln 33-36 and ln 58-61).

With respect to claims 12, 26, and 40, Farley discloses wherein the charge of the battery is further based on a change in the temperature of the battery (col 2 ln 48-51, col 5 ln 35-50, col 19 ln 52-55, and col 20 ln 10-17).

With respect to claims 13, 27, and 41, Farley discloses wherein the battery comprises a nickel metal hydride battery, a nickel cadmium battery, a lead acid battery, or a lithium ion battery (col 1 ln 8-11 and ln 60-65, col 2 ln 40-44, and col 12 ln 17-22).

With respect to claims 14, 28, and 42, Farley discloses the charger, process, and storage medium further comprising the step of cooling the battery using a cooling arrangement (col 3 ln 26-33 and col 8 ln 54-58). Furthermore, the reduction of the current input to the battery lowers the temperature created by that large current. A narrower interpretation of claims 14, 28, and 42 is addressed and alternatively rejected under 35 U.S.C. 103, as seen below.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5, 19, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farley (US 5,767,659) in view of Podrazhansky (US 5,889,385).

With respect to claims 5, 19, and 33, Farley discloses wherein the charger, process, and storage medium further comprise the steps of:

(c) measuring a first voltage across a terminal of the battery (first box labeled “read battery voltage store” in Fig. 8a);

(d) measuring a second voltage across the terminals of the battery after step (c) (second box labeled “read battery voltage store” in Fig. 8a);

(e) determining a difference between the first voltage and the second voltage (no. 81 in Fig. 8a and col 9 ln 36-40);

However, Farley does not expressly disclose step (f) wherein steps (c)-(e) are repeated until charging of the battery is substantially complete.

Podrazhansky discloses measuring first and second voltages of a battery (no. 305 in Fig. 3A), determining a difference between the first and second voltages (no. 305 in Fig. 3A), and repeating those steps until charging of the battery is substantially complete (no. 310 in Fig. 3A, no. 325 in Fig. 3B, pathways A, B, and C in Fig. 3A and 3B, and col 15 ln 15-29), in order to fully charge the battery while avoiding an overcharge, which would result in damage to the battery.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a repetition of the above mentioned steps in the charger, process, and storage medium of Farley, as did Podrazhansky, until the charging of the battery is substantially complete, so that the battery could be fully charged without being overcharged and damaged.

7. Claims 14, 28, and 42 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Farley (US 5,767,659) in view of Yagi (US 6,188,202).

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With respect to claims 14, 28, and 42, an alternative and more narrow interpretation of these claims is addressed wherein the cooling arrangement is a device or means other than reducing the current input to the battery.

Yagi discloses a cooling fan used to reduce the temperature of the battery under charge (no. 16 in Fig. 1 and col 2 ln 60-61 and col 3 ln 20-25), in order to avoid damage to the battery from an extremely high temperature.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a fan as the cooling arrangement in the charger, process, and storage medium of Farley, as did Yagi, so that damage from an extremely high temperature could be avoided.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Piggush whose telephone number is 571-272-5978. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AP


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